UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/585,711	07/10/2006	Paolo Falcioni	108041-19	4344

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EXAMINER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

PTOL-90A (Rev. 04/07)

	Application No.	Applicant(s)
Office Action Summary	10/585,711	FALCIONI ET AL.
	Examiner	Art Unit	
	NAY TUN	2612	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on <u>21 September 2009</u>.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) <u>30-49</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) <u>30-49</u> is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a) ☐ All b) ☐ Some * c) ☐ None of:
        1. ☐ Certified copies of the priority documents have been received.
        2. ☐ Certified copies of the priority documents have been received in Application No. _____.
        3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08)
    Paper No(s)/Mail Date <u>12/04/2009</u>.
4) ☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____ .

DETAILED ACTION

Claims status

1.   In the amendment filed on September 21, 2009, claims 49 has been newly added and

claims 30, 31, 41, 47 and 48 have been amended. Claims 1-29 were cancelled in the preliminary

amendment filed on 07/10/2006. Therefore, claims 30-49 are currently pending for examination.

2.   The text of those sections of Title 35, U.S. Code not included in this action can be found

in a prior Office action.

Claim Objections

3.   Claim 41 is objected to because of the following informalities:

Claim 41 recites "said at least one physical quantity" in line 4 without antecedent basis in

the claim and "at least one physical quantity" in lines 6-7 which appears to be referring to the

"physical quantity" recited in line 4. For the purpose of the examination, the examiner will

assume that "at least one physical quantity" in line 4 and "said at least one physical quantity" in

lines 6-7.

Claim 47 recites "the nonvolatile memory" without antecedent basis in the claims. For the

purpose of examination, "the nonvolatile memory" will be interpreted as "the read and write

memory".

Appropriate correction is required.

Claim Rejections - 35 USC § 112

4.   Claim 47 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for

failing to particularly point out and distinctly claim the subject matter which applicant regards as

the invention. Claim 47 recites "permits it to build in the nonvolatile memory". However, it is

unclear that "it" is referring to the system, the appliance, information or the microcontroller. For

the purpose of examination, Examiner will interpret "it" as the microcontroller.

Claim Rejections - 35 USC § 103

5.   Claims 30-49 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sharood et

al. (hereinafter "Sharood" - U.S. Patent No. 6,453,687) in view of Primm et al. (hereinafter

"Primm" - U.S. Patent Application Publication No. 2002/0124081).

        Regarding claim 30, Sharood discloses a monitoring device for use with a household

electric appliance (retrofit plug 125, figures 6A-6D), the monitoring device comprising:

i. a read and write memory (as part of the measure and transmit circuitry 620, column 9 lines 13-

16);

ii. a first interface means (serial port or other communications interface, column 10 lines 33-35);

iii. a means for measuring at least one electric quantity by measuring an electric current running

through the monitoring device (via current transformer 610, column 9 lines 6-12);

v. a microcontroller to process measurements of the at least one electric quantity to determine at

least one piece of information relating to the operation of the household electric appliance

(column 9 lines 13-28); and

vi. a second interface means (the communications circuit) to send the at least one piece

of information to a remote center (column 9 lines 42-55).

Sharood does not disclose one or more sensors for measuring one or more physical quantities of the household electric appliance that connect to the first interface means, a storage means containing one or more predefined values of the at least one physical quantity and the microcontroller determining at least one piece of information by comparing the measured value of the at least one physical quantity with one or more predefined values.

However, the preceding limitations are known in the art of communications. Primm discloses a method and system for remote monitoring of network appliances, wherein one or more sensors measure physical quantities pertaining to the operation of the appliance (paragraphs [0105] and [0109]). Primm further teaches a storage means containing one or more predefined values of the at least one physical quantity (Paragraph [112]: storage medium 120 contains alarm rules/thresholds to indicate values of parameters and Paragraph [127]: temperature threshold) and microcontroller determining at least one piece of information by comparing the measured value of the at least one physical quantity with one or more predefined values (paragraph [112] and [127]: alarm rules/thresholds are used to indicate values of parameters at which notification is desired. Comparison of the current values of the sensors to the stored alarm rules/thresholds is necessitated to trigger notification).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the device disclosed in Sharood with the addition of one or more sensors for measuring physical quantities of the appliance and a storage means for storing the threshold values as the suggestion lies in Sharood that the serial port or other communications interface can be used to connect to another sensor to provide additional data about the appliance which can be remotely monitored (column 10 lines 35-39) which increases the operability of the monitoring

device and that the comparison of measured values to the stored data to notify the control server

requiring further action (column 9 lines 34-40).

Regarding claim 31, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses a wireless communication device within the

first interface means, the wireless communication device communicating with at least one

internal sensor within the household electric appliance where the at least one internal sensor

measures a second physical quantity of an internal part of the household device (Primm,

paragraph [0109]) and that the microcontroller further processes the measurements of the second

physical quantity (Sharood, column 10 lines 37-39 and column 9 lines 47-52).

Regarding claim 32, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the at least one piece of information

includes at least one of: functional information, statistical information, and diagnostic

information, relating to the household electric appliance (Sharood: column 9 line 64 - column 10

line 8).

Regarding claim 33, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the device comprises a timing unit,

where the timing unit allows an instant time to be associated with the measurements of the one or

more physical quantities and at least one electrical quantity (Primm: paragraph [0115]).

Regarding claim 34, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the at least one electrical quantity

includes at least one of the following: momentary electric current drawn by the household

electric appliance, line voltage applied to the household electric appliance, momentary electric

power drawn by the household electric appliance, electric energy consumption of the household

electric appliance within a predefined time period, a power factor of the load represented by the

household electric appliance, $\cos(\varphi)$ of the load represented by the household electric appliance,

and type of reactive power of the load represented by the household electric appliance (Sharood:

column 9 lines 24- 28).

Regarding claim 35, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the first interface is connected to the one

or more sensors through a wireless connection (Primm: paragraph [0109] lines 20-25).

Regarding claim 36, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the second interface means is connected

to the remote center through a wireless connection (Sharood: column 10 lines 40-45).

Regarding claim 37, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the household electric appliance

includes one of: a clothes dryer, a washing/drying machine, a dishwasher, a refrigerator, a

freezer, a refrigerator/freezer, an electric oven, a gas oven, a microwave oven, a gas cooking top,

an electric cooking top, a magnetic induction cooking top, a kitchen hood, a conditioner, a gas

boiler, an electric water heater, an air conditioner, a hair dryer, an iron, a Hi-Fi system, a mixer

or any other electric kitchenware, a lighting device, an alarm device (Sharood: column 9 line 64 -

column 10 line 8 and column 10 lines 54-55).

Regarding claim 38, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the one or more physical quantities

includes at least one of: temperature, flow rate, conductivity, weight, absolute humidity, relative

humidity, pressure, linear displacement, linear velocity, linear acceleration, angular

displacement, angular velocity, angular acceleration, chemical concentration, sound pressure,

sound intensity, light intensity, oscillation frequency, and oscillation amplitude (Primm:

paragraph [0109] lines 1-5).

Regarding claim 39, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the device comprises an information

storage means for storing the at least one piece of information in the read and write memory

(Sharood: column 9 lines 29-30).

Regarding claim 40, Sharood in view of Primm discloses the device of claim 30 as

discussed above. The combination further discloses that the household electric appliance is one

of a laundry washing machine and a washing/drying machine adapted to perform at least one

wash treatment on textile items, the one or more physical quantities being preferably at least one

of the following: weight of the textile items being present in the basket of the washing machine

or the washing/drying machine, flow rate of water supplied to the washing machine or the

washing/drying machine, temperature of washing liquid contained in a tub of the washing

machine or the washing/drying machine, and conductivity of the washing liquid drained by the

washing machine or the washing/drying machine, where the washing liquid comprises water and

at least one washing agent (Sharood: column 10 lines 2-3).

Regarding claim 41, Sharood discloses a monitoring device for use with a household

electric appliance, the monitoring device comprising:

ii. a first interface means (serial port or other communications interface, column 10 lines 33-35);

iii. a means for measuring at least one electric quantity by measuring an electric current running

through the monitoring device (via current transformer 610, column 9 lines 6-12);

iv. a microcontroller to process measurements of the at least one electric quantity to determine at

least one piece of information relating to the household electric appliance (column 9 lines 13-

28), where the at least one piece of information includes at least one of functional information,

statistical information, and diagnostic information relating to the household electric appliance

(column 9 line 64 - column 10 line 8).

Sharood does not disclose a read and write memory containing one or more predefined

values of at least one physical quantity, one or more external sensors and one or more internal

sensors for measuring at least one physical quantities of the household electric appliance, where

the one or more internal sensors are connected to the first interface means through a

communication means directly connected the one or more internal sensors, microcontroller

determining at least one piece of information by comparing the measured value of the at least

one physical quantity with one or more predefined values and an information storage means for

storing the at least one piece of information in the read and write memory.

However, the preceding limitations are known in the art of communications. Primm

discloses a method and system for remote monitoring of network appliances, wherein one or

more internal and/or external sensors measure physical quantities pertaining to the operation of

the appliance (paragraphs [0105] and [0109]). Primm further teaches a read and write memory

containing one or more predefined values of at least one physical quantity (Paragraph [110]:

storage medium 120 is read-write memory, Paragraph [112]: storage medium 120 have alarm

rules/thresholds to indicate values of parameters and Paragraph [127]: temperature threshold)

and microcontroller determining at least one piece of information by comparing the measured

value of the at least one physical quantity with one or more predefined values (FIG. 8 and paragraph [112] and [127]: alarm rules/thresholds are used to indicate values of parameters at which notification is desired by a responsible party. Comparison of the current values of the sensors to the stored alarm rules/thresholds is necessitated to trigger notification) and an information storage means for storing the at least one piece of information in the read and write memory (FIG. 9: storage medium 120 and paragraph [114]: storage medium hold data 132 such as values of sensors).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the device disclosed in Sharood with the addition of one or more sensors for measuring physical quantities of the appliance and a storage means for storing the threshold values as the suggestion lies in Sharood that the serial port or other communications interface can be used to connect to another sensor to provide additional data about the appliance which can be remotely monitored (column 10 lines 35-39) which increases the operability of the monitoring device and that the comparison of measured values to the stored data to notify the control server requiring further action (column 9 lines 34-40).

Regarding claim 42, Sharood in view of Primm discloses the device of claim 41 as discussed above. The combination further discloses that the first interface means is an electric cable to the one or more external sensors (Primm: paragraph [0109] line 16).

Regarding claim 43, Sharood in view of Primm discloses the device of claim 41 as discussed above. Sharood, in another embodiment of the disclosed invention, teaches that the first interface means (and associated sensor) and monitoring device can be separate units and that the first interface means (and associated sensor) can be connected to the monitoring device (and

therefore communication means) by another interface (element 2704, figure 27B and column 28 lines 65-67). It would have been obvious to one of ordinary skill in the art at the time on the invention to use a wireless connection as the interface to reduce the amount of cabling used thereby making it easier to connect the sensor to the monitoring device and increasing the ease of installation and modification (i.e. not limited to a certain cable length).

Regarding claim 44, Sharood in view of Primm discloses the device of claim 41 as discussed above. The combination further discloses that the first interface means is wirelessly connected to the one or more external sensors (Primm: paragraph [0109] lines 20-25).

Regarding claim 45, Sharood in view of Primm discloses the device of claim 41 as discussed above. Sharood further discloses that the first interface means is connected by an electronic cable to the communication means (it is inherent to the disclosure and well-known in the art that different electronic and circuit components within a device are connected by some sort of cable or wiring means).

Regarding claim 46, Sharood in view of Primm discloses the device of claim 41 as discussed above. The combination further discloses that the communication means and the one or more internal sensors are connected through an electronic control means (Sharood: measure and transmit circuit 620), where the electronic control means collect, stores, and processes the measurements from the one or more physical quantities from the one or more internal sensors (Sharood: column 9 lines 29-41).

Regarding claim 47, Sharood discloses a system for monitoring a household electric appliance, the system comprising:

a) a household electric appliance (column 9 lines 64 – column 10 lines 8);

c) an electronic control means, the electronic control means configured to collect, store, and

process measurements (measure and transmit circuitry 620, column 9 lines 13- 28);

d) a communication means communicating with the electronic control means to transfer the

measurements of the one or more physical internal quantities to a first interface means on a

monitoring device (column 9 lines 42-55);

e) the monitoring device including,

    b. the first interface means to connect to the one or more external sensors and the

communication means to receive the measurements of the one or more physical external

quantities and the one or more physical internal quantities (*The additional data can be*

transmitted to a remote monitoring device using the PLC network, column 10 lines 37-39),

    c. a means for measuring at least one electric quantity by measuring an electric current

running through the monitoring device (via current transformer 610, column 9 lines 6-12),

    e. a microcontroller to process the measurements of the at least one electric quantity to

determine at least one piece of information relating to the household electric appliance (column 9

lines 13-28), where the at least one piece of information includes at least one of: functional

information, statistical information, and diagnostic information relating to the household electric

appliance (column 9 line 64 - column 10 line 8), and

    f. a second interface means to send the at least one piece of information to a remote

center (the communications circuit, column 9 lines 42-55); and

f) the remote center to collect the at least one piece of information from one or more monitoring

devices connected to respective household electric appliances and to extract statistical

information about the household electric appliances being monitored (column 9 line 64 - column

10 line 8).

Sharood does not disclose that the electronic control means is connected to one or more internal sensors, where the one or more internal sensors measure one or more physical internal quantities of the household electric appliance, or one or more external sensors to measure one or more physical external quantities of the household electric appliance, or that the monitoring device includes a timing unit to associate an instant time with the measurements of the one or more physical quantities and the at least one electric quantity, or a read and write memory containing one or more predefined values of the one or more physical external quantities and one or more physical internal quantities, or the microcontroller processing the measurements of the one or more physical external quantities, one or more physical internal quantities to determine at least one piece of information by comparing said value of at least one physical external quantity or physical internal quantity with one or more defined values.

However, the preceding limitations are known in the art of communications. Primm teaches a method and system for remote monitoring of network appliances, wherein one or more sensors, which may be internal or external to the appliance, measure physical quantities pertaining to the operation of the appliance (paragraphs [0105] and [0109]), and also teaches that a clock may be used to establish a time at which a particular measurement is taken (paragraph [0115]).

Primm further teaches a read and write memory (Paragraph [110]: storage medium 120 can be read and write memory) containing one or more predefined values (Paragraph [112]: storage medium 120 have alarm rules/thresholds to indicate values of parameters and Paragraph [127]: temperature threshold) and microcontroller processing the measurements of the one or

more physical external quantities, one or more physical internal quantities to determine at least

one piece of information by comparing the measured value of the at least one physical quantity

with one or more defined values (FIG. 8 and paragraph [112] and [127]: alarm rules/thresholds

are used to indicate values of parameters at which notification is desired. Comparison of the

current values of the sensors to the stored alarm rules/thresholds is necessitated to trigger

notification and Paragraph [109]: measured values can be internal and external physical

quantities.).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the

invention to utilize the system of Sharood with the additional features disclosed in Primm as the

suggestion lies in Sharood that the serial port or other communications interface can be used to

connect to another sensor to provide additional data about the appliance which can be remotely

monitored (column 10 lines 35-39) which increases the operability of the monitoring device, and

using a timing unit to associate a time stamp with the measurement is a cumulative feature which

also increases operability by permitting a user to know when a condition occurred or for how

long it has occurred (i.e. in the case of a refrigerator, how long the temperature has been above a

certain threshold which could help determine if food spoilage has occurred), and that the

comparison of measured values to the stored data to notify the control server requiring further

action (Sharood: column 9 lines 34-40).

Regarding claim 48, Sharood in view of Primm discloses the system of claim 47 as

discussed above. Sharood further discloses that the remote center receives a plurality of

information sent by the monitoring device that the remote center collects and sorts for the

purpose of identifying at least one parameter related to the operation of a washing machine or a

washing/drying machine, the at least one parameter being preferably at least one of the following: number of wash treatments performed by the washing machine or the washing/drying machine within a predefined time interval, quantity and typology of textile items loaded on average by a user for each wash treatment, quantity and typology of washing agents loaded on average by the user for each wash treatment, average quantity of water used by the washing machine or the washing/drying machine for each wash treatment, and average electric energy absorbed by the washing machine or the washing/drying machine for each wash treatment (column 9 line 64 - column 10 line 8).

Regarding claim 49, Sharood in view of Primm discloses the system of claim 47 as discussed above. The combination further discloses wherein the microcontroller is further programmed to collect information (Primm: FIG. 8 and paragraph [114-115]: the storage medium 120 stores the values of sensors and with time at which the measurement is taken) that allows the system to trace a history of the monitored electric appliance that permits it to build in the nonvolatile memory, profiles being indicative of a trend within a predefined time period of a particular physical quantity or typology of information obtained by the microcontroller based upon values detected by the sensors (the values/data stored in memory can be used i.e. allowed for further analysis for a trend).

Response to Arguments

13.   Applicant's arguments filed on September 21, 2009 have been fully considered.

Rejection to claim 45 under 35 USC § 112 is withdrawn.

Regarding to claim rejections under 35 USC § 103, the arguments are moot in view of

new grounds of rejections.

Conclusion

6.   Applicant's amendment necessitated the new ground(s) of rejection presented in this

Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from

the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the

mailing date of this final action and the advisory action is not mailed until after the end of the

THREE-MONTH shortened statutory period, then the shortened statutory period will expire on

the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be

calculated from the mailing date of the advisory action. In no event, however, will the statutory

period for reply expire later than SIX MONTHS from the date of this final action.

Contact Information

7.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Nay Tun whose telephone number is (571) 270-7939. The

examiner can normally be reached on Mon-Thurs from 9:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's Supervisor,

Daniel Wu can be reached on (571) 272-2964. The fax phone number for the organization where

this application or proceeding is assigned is 703-872-9306. Information regarding the status of

an application may be obtained from the Patent Application Information Retrieval (PAIR)

system. Status information for published applications may be obtained from either Private PAIR

or Public PAIR. Status information for unpublished applications is available through Private

PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov.

Should you have questions on access to the Private PAIR system, contact the Electronic Business

Center (EBC) at 866-217-9197 (toll-free).

/NAY TUN/

/Daniel Wu/
Supervisory Patent Examiner, Art Unit 2612